

- Note:**
- (i) All questions are compulsory.
 - (ii) Use of calculator is not allowed.
 - (iii) The numbers to the right of the questions indicate full marks.
 - (iv) In case of MCQs (Q. No. 1.(A)), only the first attempt will be evaluated and will be given credit.
 - (v) For each MCQ, the correct alternative - a, b, c, or d - with subquestion number is to be written as an answer.
For e.g., i. a, ii. b, iii. c.
 - (vi) Scientifically correct, labelled diagrams should be drawn wherever necessary.

Q.1. (A) Choose the correct option. [5]

- i. Transfer of information from a molecule of DNA to mRNA is called _____ process.
 - a. transcription
 - b. translation
 - c. translocation
 - d. mutation
- ii. Body breaks up into several fragments and each fragment starts to live as a new individual. This is _____ type of reproduction.
 - a. budding
 - b. fragmentation
 - c. regeneration
 - d. binary fission
- iii. Incomplete combustion of fuels leads to formation of _____.
 - a. carbon monoxide
 - b. carbon dioxide
 - c. chlorofluorocarbon
 - d. hydrogen sulphide
- iv. The spindle fibres start appearing from _____ stage of karyokinesis.
 - a. prophase
 - b. metaphase
 - c. anaphase
 - d. telophase

- v. Salts which can be used as supplement of calcium and iron are obtained from _____.
- a. carbonic acid b. acetic acid
c. citric acid d. gluconic acid

(B) Answer the following questions. [5]

i. **Find the odd one out.**

Drying, Salting, Cooking, Soaking with sugar

ii. **Find out the correlation and write in one sentence.**

Annelida : Earthworm : : Platyhelminthes : _____

iii. **State whether True or False.**

Tobacco-containing substances cannot cause cancer of mouth and lungs.

iv. Write the functions of the testes.

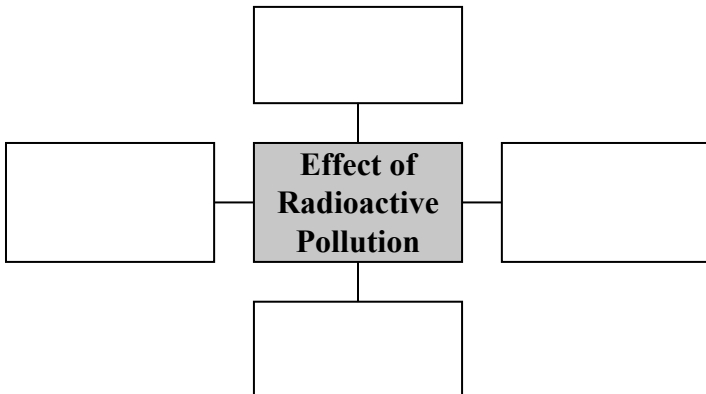
v. I am a connecting link between Reptilia and Mammals. What is my name?

Q.2. (A) Give scientific reasons. (Any two) [4]

- i. Indians should follow family planning for controlling population.
- ii. We feel exhausted after exercising.
- iii. Hydroelectric energy, solar energy, and wind energy are called renewable energies.

(B) Answer the following questions. (Any three) [6]

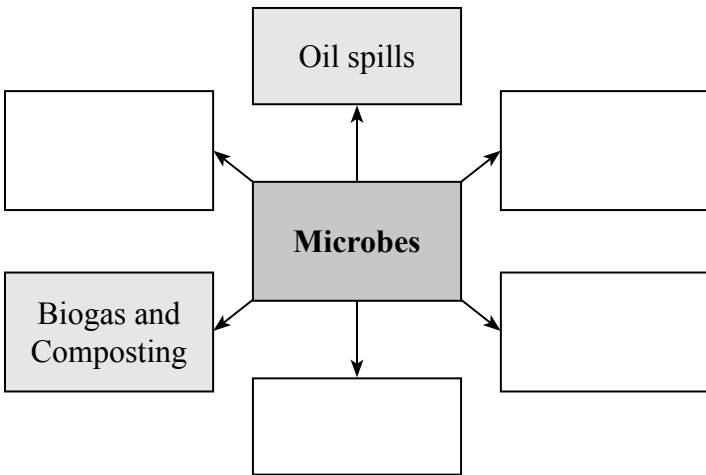
i. **Complete the following chart.**



- ii. Distinguish between Aves and Mammalia.
- iii. By observing the given picture, write any *two* effects of this disaster.



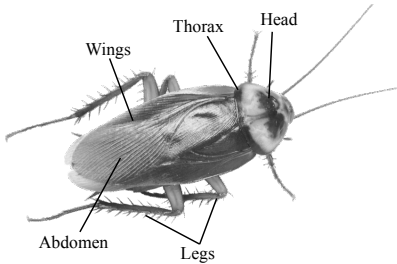
- iv. Explain *four* ways to minimize stress.
- v. Complete the following conceptual picture.



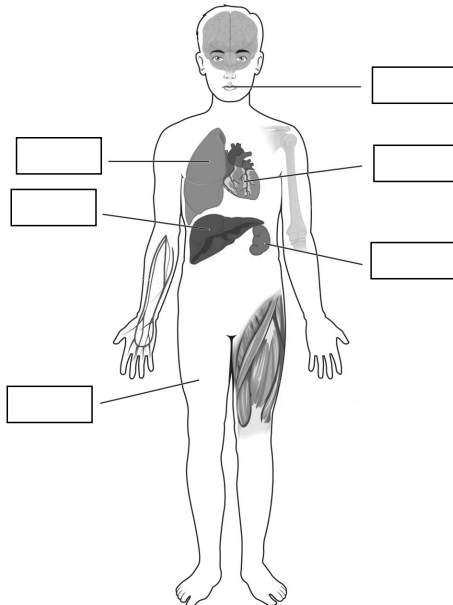
Q.3. Answer the following questions. (Any five) [15]

- i. Explain the importance of anatomical evidences with examples.
- ii. What will you do? Why?
 - a. Child of your neighbour is addicted to tobacco chewing.
 - b. Your friend has developed the hobby of snapping selfies.
 - c. Your sister has become incommunicative. She prefers to remain alone.

- iii. Which precautions are necessary for proper decomposition of domestic waste?
- iv. Observe the given diagram. Write the answers of the following questions:



- a. To which phylum does the animal included in the diagram belong?
 - b. What is the exoskeleton made up of?
 - c. What is the symmetry?
- v. Explain the following concepts in short.
 - a. Surrogacy
 - b. In Vitro Fertilization (IVF)
 - c. Sperm Bank
- vi. Body organization of human is shown in the following figure. Label the different organs present in the human body.



- vii. Make a table based on forms of energy and corresponding devices.

Sr. No.	Forms of Energy	Devices
1.	Electric	
2.	Mechanical	Sewing machine, Bicycle
3.	Thermal	
4.		Solar cooker, Solar heater

- viii. Complete the paragraph using proper words from the brackets. (mechanical, *Rhizobium*, aquatic, toxic, CO₂, nitrogen, *Pseudomonas*, amoeba, bacteria, hydrocarbons)

Spilling of petroleum oil occurs in ocean due to various reasons. This oil may prove fatal and toxic to _____ organisms. It is not easy to remove the oil layer from surface of water by _____ method. However, bacteria like _____ spp. and *Alcanovorax borkumensis* have the ability to destroy the pyridines and other chemicals. Hence, these _____ are used to clear the oil spills. These are called as hydrocarbonoclastic bacteria (HCB). HCB decompose the _____ and bring about the reaction of carbon with oxygen. _____ and water is formed in this process.

Q.4. Answer the following questions. (Any one) [5]

- i. Attempts at various levels are performed for conserving environment. Which role would you like to perform. Give two actions each.
- a. Prevention b. Control c. Production
d. Awareness e. Conservation
- ii. a. What is Biotechnology?
b. Give one use of Biotechnology.
c. Give one commercial use of Biotechnology.
d. Write two examples of bacterial biofertilizers.
e. Write names of two genetically modified crops.